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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/470,787	12/23/1999	EKO-ADI WIBOWO	BORDEN/P10US	6589

7590 08/26/2003

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EXAMINER	
NGUYEN, HANH N	
ART UNIT	**PAPER NUMBER**
2662	6

DATE MAILED: 08/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/470,787	WIBOWO ET AL.	
	Examiner	Art Unit	
	Hanh Nguyen	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *Application filed on 12/23/99* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,7,8,15-21,25,26,30 and 33* is/are rejected.

7)☒ Claim(s) *4-6,9-14,22-24,27-29,31 and 32* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5&7* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 7, 8, 15-17, 19-21, 25, 26 and 33 are rejected under 35 USC 103(a) as being unpatentable over **Silberschatz et al.** (US Pat. No. 6,556,578 B1) in view of **Chapman et al.** (US Pat. NO. 6,304,552 B1).

In claims 1 and 19, **Silberschatz et al.** discloses, in Fig 1A, 2a & 2B, when an average queue occupancy f1-f4 (average queue size) is greater than a maximum threshold of a buffer capacity B, packet is dropped (when average queue size exceeds the congestion threshold). (see col.4, lines 25-30). A count value (packet counter) is incremented and reset to zero when ever a packet is dropped (packet counter is reset to zero). See col.4, lines 50-55. When packets entering one of the local queues f1-f4 is greater than a corresponding local queue thresholds B1-B4 (packet count threshold) , packet is also dropped (newly arriving packets reaches packet count threshold). See 4, line 60 to col.5, line 5. **Silberschatz et al.** does not disclose a threshold means for setting packet count threshold. **Chapman et al.** discloses, in Fig.8, a node 202 comprising a threshold setting stored in memory 810 (a threshold setting means). See col.12, lines 55-58. A controller 808 determines whether the local queue threshold has been reached or not (arrived packets has reached packet count threshold). See col.12, lines 50-55. Therefore, it would have been obvious to modify the **Silberschatz et al.** by adding the threshold setting of **Chapman et**

al. into the node 80 so that the queue has a preset threshold. The motivation is to prevent congestion in a network.

In claims 2, 3, 20 and 21, **Silberschatz et al.** discloses, in Fig.2A, the average queue occupancy is determined at step 32 by calculating exponential weight moving average filter, where the average queue occupancy is recomputed on the arrival of each new packet (calculating an average queue size by regularly updating average queue size using exponential average technique). See col.4, lines 10-20.

In claims 7 and 25, **Silberschatz et al.** discloses, in Fig.2A, the average queue occupancy is recomputed on the arrival of each new packet (average queue size is updated after predetermined number of cells have arrived). See col.4, lines 10-20.

In claims 15 and 33, **Silberschatz et al.** does not disclose priority scheme applied for discarding packets. **Chapman et al.** discloses, in Fig.9, if the buffer fill is above the threshold, all low priority arriving packets are discarded (priority scheme applied for discarding packets). See col.13, lines 15-20. Therefore, it would have been obvious to apply the priority scheme of **Chapman et al.** into the **Silberschatz et al.** to transmit priority packets and drop low priority packet. The motivation is to obtain desired packets.

In claims 8 and 26, **Silberschatz et al.** does not disclose the average queue size is updated after a predetermined period of time has elapsed. Since **Silberschatz et al.** can recompute average queue occupancy on the arrival of each new packet (average queue size is updated after predetermined number of cells have arrived). See col.4, lines 10-20, therefore, it would have been obvious to recompute the average queue size after a period of time so that a determination about whether the buffer size is exceeded is made.

In claim 16, **Silberschatz et al.** does not disclose threshold means uses a lookup table. Since **Chapman et al.** discloses, in Fig.8, a memory 810 comprising a threshold setting that limits the amount of traffic allowed for all of queues, therefore, It would have been obvious to use a table in memory 810 to set a threshold. The motivation is to provide a CPU capability to execute preset threshold stored in the table of memory.

Allowable Subject Matter

Claims 4-6, 22-24, 9-12, 27-29, 13, 14, 31 and 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

In claims 4 and 22, the prior art does not disclose the average queue size at time t is calculated as : $Q_t = Q_{t-1} * (1\text{-Alpha}) + Q_t * \text{Alpha}$,

Where Q_t is an instantaneous queue size and Q_{t-1} is an average queue size at time t-1, and Alpha is an queue-length average parameter assigned a value between zero and one.

In claims 9 and 27, the prior art does not disclose means for diving the total queue size into a preselected number of N regions, wherein the threshold means sets a packet-count threshold by using a descending stair case function F(n), such that one of every F(n) packets is discarded, when the average queue size in a buffer region n, $1 <= n <= N$.

In claims 13 and 31, the prior art does not disclose means for diving the total queue size into a preselected number of M regions, for high priority traffic defining a high priority congestion threshold, and a preselect number of N regions for low priority traffic defining a low

priority congestion threshold, wherein the threshold means sets the packet-count threshold by using two functions F(n,m) and F(m), such that:

When the average queue size of high priority traffic is above the high priority congestion threshold and is in the buffer region m, 1 <=n<=N, one of every F(n,m) low priority packets is discarded.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Rusu et al. (US Pat. No. 6,141,323) discloses Closed Loop Congestion Control Using a Queue Measurement System.

Lyon et al. (US pat. No. 6,333,917 B1) discloses Method and Apparatus for RED (Random early Detection) and Enhancements.

Siu (US Pat. No. 6,246,687 B1) discloses Network Switching System Supporting Guaranteed Data Rates.

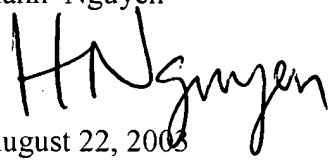
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Nguyen whose telephone number is 703 306-5445. The examiner can normally be reached on Monday-Friday 8:30 AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 703 306-4744. The fax phone numbers for the organization where this application or proceeding is assigned are 703 305-3988 for regular communications and 703 308-9051 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-4700.

Fax number : 703 872-9314

Hanh Nguyen



August 22, 2003